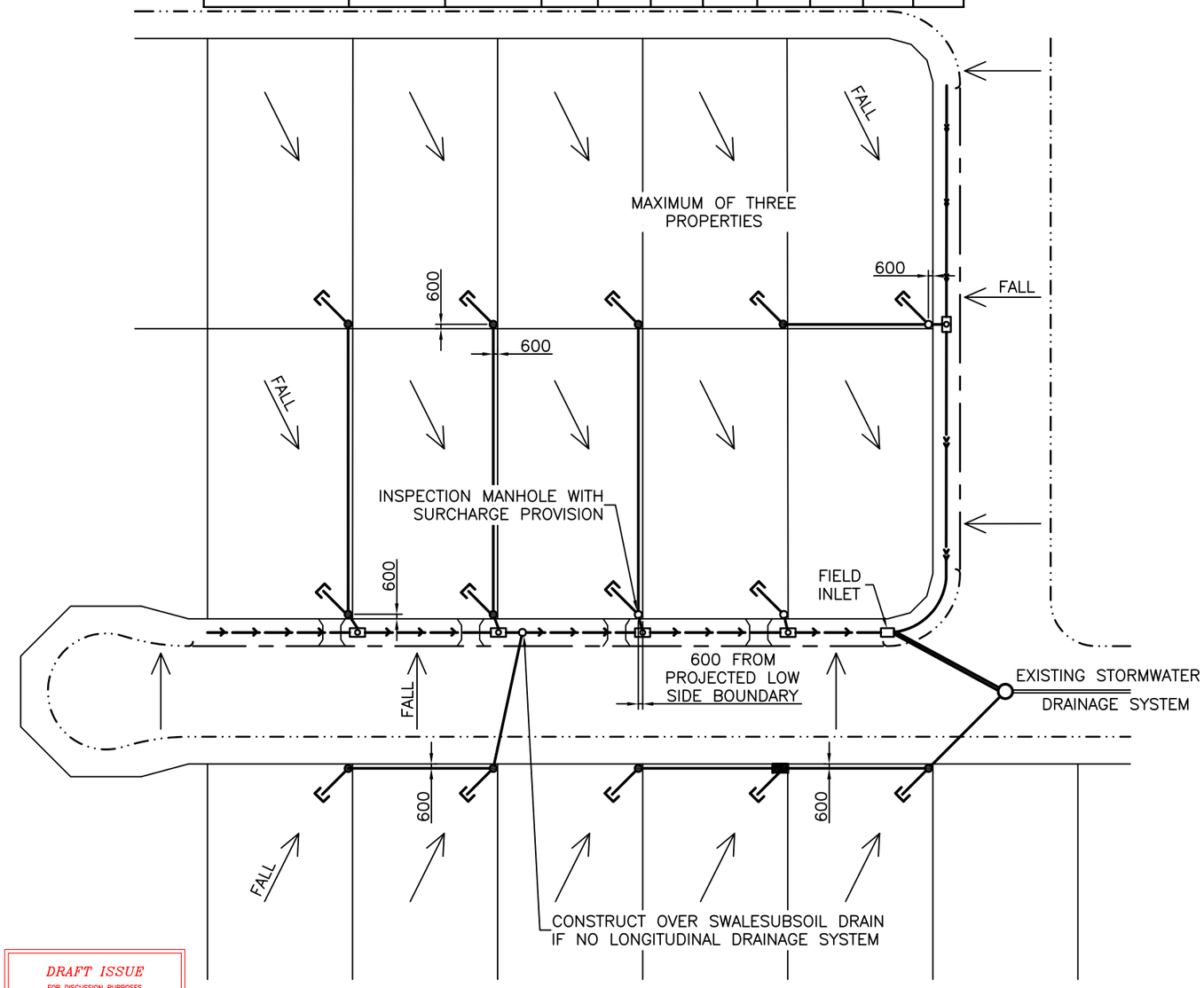
DESIGN CRITERIA FOR LEVEL II ALLOTMENT DRAINAGE SYSTEM

EASEMENT WIDTH (m)	NOMINAL PIPE DIAMETER (mm)	MINIMUM PIPE SLOPE (%)	FLOW (L/s) – NOTE 5							
			PIPE GRADIENT % – NOTE 6							
			0.5	1.0	1.5	2.0	2.5	3.0	4.0	5.0
NOT REQUIRED – NOTE 3	150	1.0	N/A	18	23	26	30	33	38	42
1.5	225	0.5	38	56	67	78	87	96	110	125
1.5	300	0.5	84	120	146	170	190	210	N/A	N/A



TYPICAL PLAN ROOFWATER DRAINAGE SYSTEM

LEGEND

- ROOFWATER INSPECTION MANHOLE AS PER UMS 352 WITH GRATED COVER
- ROOFWATER INSPECTION MANHOLE AS PER UMS 352 WITH SOILD COVER
- ROOFWATER INSPECTION OPENING WITH 100mm DIA STUB AND END CAP
- U.P.V.C. Y JUNCTION WITH 100mm DIA STUB AND END CAP
- ROOFWATER SURCHARGE PIT AS PER UMS 158
- VEGETATED SWALE WITH SUBSOIL DRAIN AS PER UMS 153. (MAXIMUM 300mm dia)
- VEGETATED SWALE WITHOUT SUBSOIL DRAIN
- VEHICLE ACCESS (REFER UMS 152)

DRAFT DESIGN APPROVED FOR ISSUE
SIGNATURE : P Cotton signature on original DATE : 03/09/04
MANAGER INFRASTRUCTURE MANAGEMENT - R.P.E.Q: 2546

NOTES:

1. ROOFWATER RUNOFF TYPICALLY CONTAINS HIGH NITROGEN CONCENRTATIONS WHICH CAN BE HARMFULLTO AQUATIC RECEIVING ENVIRONMENTS. WHERE ROOFWATER IS CONNECTED DIRECTLY TO SWALE SUBSOIL DRAINS OR TRUNK DRAINAGE SYSTEMS ADDITIONAL END OF LINE WATER QUALITY TREATMENT WILL BE REQUIRED.
2. DESIGN FLOWS CALCULATED BASED ON MANNING'S 'n' OF 0.011. PIPE SIZED IN ACCORDANCE WITH QUEENSLAND URBAN DRAINAGE MANUAL ASSUMING A DISCHARGE OF 10 L/s FROM EACH ALLOTMENT BASED ON ROOF AREAS OF 180m² AND ARI OF 20 YEARS FOR S.E. QUEENSLAND. ALL PIPES SHALL HAVE A MINIMUM DIAMETER OF 150mm, EXCEPT ACROSS FOOTPATH.
3. WHERE THE PIPE GRADIENT EXCEEDS 5%, UNDERTAKE A MORE DETAILED HYDRAULIC ANALYSIS INCLUDING THE ASSESSMENT OF HEAD LOSSES, WHERE APPROPRIATE.
4. AN EASEMENT IN FAVOUR OF COUNCIL IS REQUIRED WHEN THE ROOFWATER LINE IS DESIGNED TO SERVICE MORE THAN 3 ALLOTMENTS, IRRESPECTIVE OF PIPE SIZE.
5. PROVIDE MINIMUM 600 COVER TO PIPES EXCEPT WHERE REDUCED COVER IS NECESSARY TO EFFECT DISCHARGE TO KERB AND CHANNEL. PIPE TYPES AND CLASSES TO COMPLY WITH THE FOLLOWING REQUIREMENTS:
   - UPVC PIPE (MINIMUM SEWER CLASS SN8) MANUFACTURED IN ACCORDANCE WITH AS1260 PVC PIPES AND FITTINGS FOR DRAIN, WASTE AND VENT APPLICATIONS. JOINT TYPE, SOLVENT WELDED.
   - STEEL REINFORCED CONCRETE PIPE MINIMUM CLASS 2, MANUFACTURED TO AS 4058. JOINT TYPE, RUBBER RING.
   - FIBRE REINFORCED CONCRETE PIPE MINIMUM CLASS 2, MANUFACTURED TO AS 4139. JOINT TYPE, RUBBER RING (SUPERTITE).
   - POLYOLEFIN PIPES MANUFACTURED IN ACCORDANCE WITH DRAFT A0308–2003–06–10 "POLYETHYLENE AND POLYPROPYLENE PIPES AND FITTINGS FOR DRAINAGE AND SEWERAGE APPLICATIONS.
6. MINIMUM PIPE GRADES TO COMPLY GENERALLY WITH AS 3500 NATIONAL PLUMBING AND DRAINAGE CODE PART 3 STORMWATER DRAINAGE:
   - 1.0% GRADE FOR PIPES ≤ 150 DIAMETER
   - 0.5% GRADE FOR PIPES > 150 BUT < 375 DIAMETER
   - 0.3% GRADE FOR PIPES ≥ 375 DIAMETER
7. PROVIDE ROOFWATER INSPECTION MANHOLES:
   - AT MAXIMUM 100m SPACING.
   - AT ALL CHANGES IN PIPE SIZES.
   - AT ALL DIRECTION CHANGES EXCEEDING 15°
   - AT LINE TERMINATION.
8. PROVIDE "AS CONSTRUCTED" INFORMATION FOR:
   - OFFSETS OF THE MAIN LINE TO THE PROPERTY BOUNDARY.
   - THE LOCATIONS OF INSPECTION MANHOLES AND Y JUNCTIONS MEASURED FROM THE PROPERTY BOUNDARY.
   - PIPE DIAMETERS.
9. DIMENSIONS IN MILLMETRES (U.N.O.)

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
DFT2	ROOF WATER SURCHARGE PIT ADDED, PIPE CLASS AND TYPE ALTERED	FEB '05	KP '05	PC '05
DRAFT	DRAFT ISSUE FOR DISCUSSION	JUN '03	JUL '04	JUL '04

DESIGN AUTHORISED FOR ISSUE
MANAGER INFRASTRUCTURE MANAGEMENT R.P.E.Q: _____
DESIGN APPROVED
PRINCIPAL ENGINEER STRATEGIC INFRASTRUCTURE MANAGEMENT

DESIGN	CD/UMD	DATE	Jun '03
DRAWN	CD/UMD	DATE	Jun '03
CHECKED	IM - UMD	DATE	Jul '04
DRAWING FILENAME	\UMS 154 (DRAFT)		
ASSOCIATED PLANS			

BRISBANE CITY

BRISBANE CITY COUNCIL - URBAN MANAGEMENT DIVISION

ROOFWATER DRAINAGE FOR LOW DENSITY RESIDENTIAL WSUD SUBDIVISIONS

SCALE	NOT TO SCALE	
DWG No.	UMS 154	
ORIGINAL SIZE	A3	REVISION DFT2